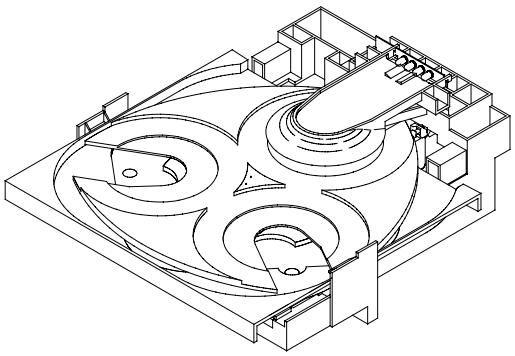
aiwa SERVICE

AZG-1

English



SERVICE MANUAL

CD-R/RW MECHANISM

BASIC CD MECHANISM:3ZG-2 E3
KSM-2131FAM

TYPE	BASIC CD MECHANISM
YKZD3RDF	3ZG-2 E3
ZD3RNDM	
ZD3RDM	
YZD3RNDM	
YZD3RDM	
ZD3RN1DM	
YZD3RNMDM	
YZD3RMDM	
ZD3RMDM	
ZD3RMDJM	
YZD3RNDCM	
YZD3RDCM	
ZD4RDC	KSM-2131 FAM

aiwa

S/M Code No. 09-001-335-3N8

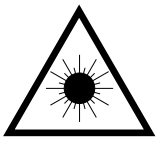
DATA

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

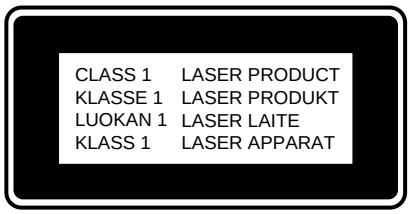
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

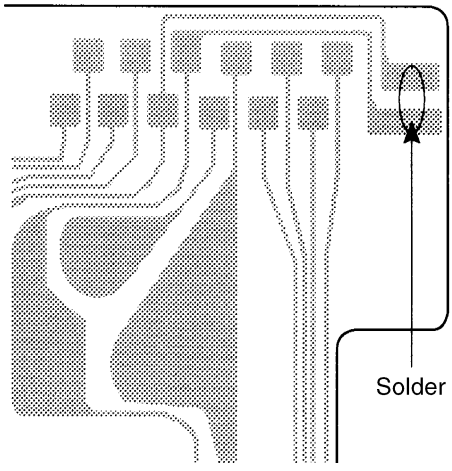


Precaution to replace Optical block (KSS-213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

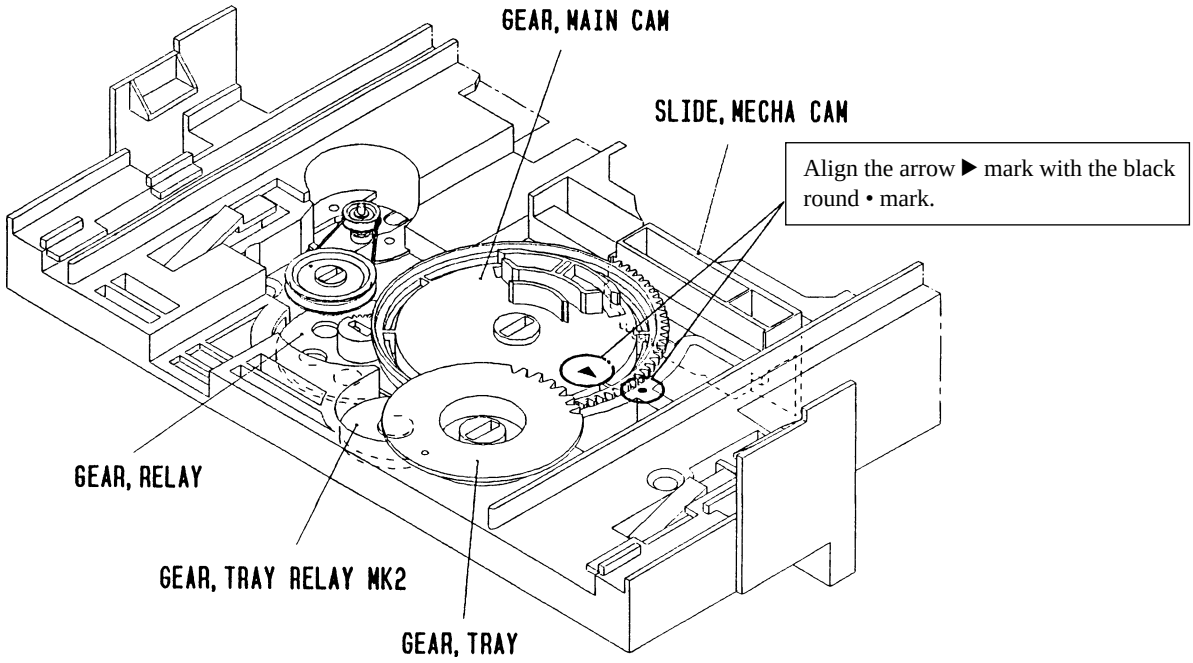
PICK-UP Assy P.C.B



How to Adjust the Rotating Phase of the Gear, Main Cam

1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

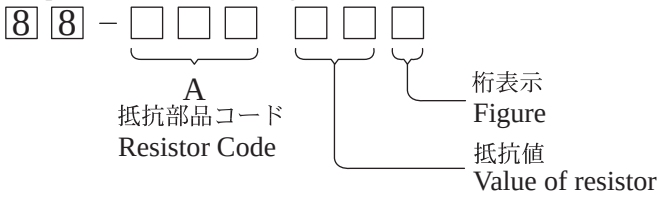
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A21-381-040		C-IC,LA9235M
	87-A21-591-010		C-IC,LC78641NE-D
	87-A21-414-010		IC,BA5927S
TRANSISTOR			
	87-026-609-080		TR,KTA1266GR
	87-A30-076-080		C-TR,2SC3052F
	87-026-214-080		TR,DTA114YS (0.3W)
	87-A30-515-080		TR,2SA1979 O/Y
	87-A30-087-080		C-FET,2SK2158
	87-026-237-080		CHIP-TR,DTC124XK
	<EXCEPT ZD3RN1DM,YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>		
	87-A30-075-080		C-TR,2SA1235F
DIODE			
	87-A40-270-080		C-DIODE,MC2838
	87-070-136-080		ZENER,MTZJ5.1B
	87-A40-003-080		ZENER,MTZJ4.3A
	87-A40-337-080		ZENER,MTZJ 6.8B
	87-A40-313-080		C-DIODE,MC 2840
3CD C.B			
C1	87-010-374-080		CAP, ELECT 47-10V
C2	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C2	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C3	87-010-260-080		CAP, ELECT 47-25V
C4	87-010-260-080		CAP, ELECT 47-25V
C5	87-010-197-020		C-CAP,S 0.01-25 B
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C5	87-010-197-080		CAP, CHIP 0.01 DM
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C6	87-010-405-080		CAP, ELECT 10-50V
C7	87-010-263-080		CAP, ELECT 100-10V
C8	87-012-349-080		C-CAP,S 1000P-50 CH
C10	87-010-546-080		CAP, ELECT 0.33-50V
C11	87-010-401-080		CAP, ELECT 1-50V
C13	87-010-321-020		C-CAP,S 82P-50 CH
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C13	87-010-321-080		CHIP CAPACITOR,82P(J)
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C15	87-010-197-020		C-CAP,S 0.01-25 B
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C15	87-010-197-080		CAP, CHIP 0.01 DM
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C16	87-010-260-080		CAP, ELECT 47-25V
C101	87-010-992-080		C-CAP,S 0.047-25 B
C102	87-010-401-080		CAP, ELECT 1-50V
C103	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C103	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C104	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C104	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C105	87-010-260-080		CAP, ELECT 47-25V
C106	87-010-322-080		C-CAP,S 100P-50 CH
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C106	87-010-322-020		C-CAP,S 100P-50 CH
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C107	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C107	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C108	87-010-186-020		C-CAP,S 4700P-50 B
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C108	87-010-186-080		CAP,CHIP 4700P
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C109	87-010-992-080		C-CAP,S 0.047-25 B
C110	87-010-322-080		C-CAP,S 100P-50 CH
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C110	87-010-322-020		C-CAP,S 100P-50 CH
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C111	87-010-260-080		CAP, ELECT 47-25V
C112	87-010-197-020		C-CAP,S 0.01-25 B
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C112	87-010-197-080		CAP, CHIP 0.01 DM
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C114	87-010-260-080		CAP, ELECT 47-25V
C115	87-010-197-020		C-CAP,S 0.01-25 B
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C115	87-010-197-080		CAP, CHIP 0.01 DM
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C116	87-010-260-080		CAP, ELECT 47-25V
C117	87-010-197-020		C-CAP,S 0.01-25 B
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C117	87-010-197-080		CAP, CHIP 0.01 DM
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C118	87-010-263-080		CAP, ELECT 100-10V
C119	87-015-819-080		CAPACITOR,0.01
C120	87-010-312-080		C-CAP,S 15P-50 CH
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C120	87-010-312-020		C-CAP,S 15P-50 J CH
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C121	87-010-312-080		C-CAP,S 15P-50 CH
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C121	87-010-312-020		C-CAP,S 15P-50 J CH
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C122	87-010-404-080		CAP, ELECT 4.7-50V
C123	87-010-197-020		C-CAP,S 0.01-25 B
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C123	87-010-197-080		CAP, CHIP 0.01 DM
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C124	87-010-401-080		CAP, ELECT 1-50V
C126	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C126	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C128	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C128	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C130	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C130	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C132	87-010-405-080		CAP, ELECT 10-50V
C133	87-010-314-020		C-CAP,S 22P-50 CH
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C133	87-010-314-080		C-CAP,S 22P-50V
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C135	87-A11-088-080		CAP,TC U 100P-50 J CH
C151	87-010-405-080		CAP, ELECT 10-50V
C152	87-010-405-080		CAP, ELECT 10-50V
C192	87-012-349-080		C-CAP,S 1000P-50 CH
C193	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C193	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C201	87-A10-730-080		CAP,E 1000-16 SMG
C202	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C202	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C204	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C204	87-010-196-080		CHIP CAPACITOR,0.1-25
	<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		
C205	87-010-405-080		CAP, ELECT 10-50V
C206	87-010-405-080		CAP, ELECT 10-50V
C207	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
	<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>		

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C207	87-010-196-080		CHIP CAPACITOR,0.1-25
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C301	87-010-382-080		CAP, ELECT 22-25V
C302	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
			<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C302	87-010-196-080		CHIP CAPACITOR,0.1-25
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C303	87-010-260-080		CAP, ELECT 47-25V
C401	87-010-322-020		C-CAP,S 100P-50 CH
			<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C401	87-010-322-080		C-CAP,S 100P-50 CH
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C402	87-010-322-020		C-CAP,S 100P-50 CH
			<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C402	87-010-322-080		C-CAP,S 100P-50 CH
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C403	87-010-322-020		C-CAP,S 100P-50 CH
			<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C403	87-010-322-080		C-CAP,S 100P-50 CH
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C404	87-010-322-080		C-CAP,S 100P-50 CH
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C404	87-010-322-020		C-CAP,S 100P-50 CH
			<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C405	87-010-322-020		C-CAP,S 100P-50 CH
			<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C405	87-010-322-080		C-CAP,S 100P-50 CH
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C406	87-010-322-020		C-CAP,S 100P-50 CH
			<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C406	87-010-322-080		C-CAP,S 100P-50 CH
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C407	87-010-405-080		CAP, ELECT 10-50V
C454	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
			<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C454	87-010-196-080		CHIP CAPACITOR,0.1-25
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C601	87-010-260-080		CAP, ELECT 47-25V
C602	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
			<EXCEPT YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C602	87-010-196-080		CHIP CAPACITOR,0.1-25
			<YZD3RNDCM,YZD3RDCM,YKZD3RDF,ZD4RDC>
CN1	87-A60-429-010		CONN,16P H TOC-A
CN201	84-ZG1-648-010		CONN ASSY,6P<ZD4RDC>
CN201	87-099-199-010		CONN,6P 6216 H<EXCEPT ZD4RDC>
CN202	87-A60-130-010		CONN,5P V FE
CN301	87-A60-154-010		CONN,6P H FE
CN601	87-009-345-010		CONN,2P PH H
			<YZD3RMDM,YZD3RNMDM,ZD3RMDM,ZD3RMDJM>
CON401	87-099-030-010		CONN,13P 6216H
FB601	87-008-372-080		FILTER, EMI BL OIRNI
			<YZD3RMDM,YZD3RNMDM,ZD3RMDM,ZD3RMDJM>
FB602	87-008-372-080		FILTER, EMI BL OIRNI
LED601	87-A40-558-010		LED,SLZ-8128A-01-A
M201	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
			<EXCEPT ZD4RDC>
M201	87-045-383-010		MOT,M9I50T28-2<ZD4RDC>
SW201	87-036-109-010		PUSH SWITCH
SW202	87-036-109-010		PUSH SWITCH
X101	87-A70-046-010		VIB,XTAL 16.934MHZ
LED C.B			
			<YZD3RDCM,YZD3RMDM,ZD3RMDM,ZD3RMDJM,ZD3RDM,YZD3RDM,YKZD3RDF>
LED501	87-A40-263-080		LED,SLH-56PCT31 GRN
			<YZD3RDCM,YZD3RMDM,ZD3RMDM,ZD3RMDJM,ZD3RDM,YZD3RDM,YKZD3RDF>
LED502	87-A40-263-080		LED,SLH-56PCT31 GRN
			<YZD3RDCM,YZD3RMDM,ZD3RMDM,ZD3RMDJM,ZD3RDM,YZD3RDM,YKZD3RDF>
LED503	87-A40-268-080		LED,SLH-56DCT31 ORN
			<YZD3RDCM,YZD3RMDM,ZD3RMDM,ZD3RMDJM,ZD3RDM,YZD3RDM,YKZD3RDF>
LED503	87-A40-263-080		LED,SLH-56PCT31 GRN<ZD4RDC>
LED504	87-A40-268-080		LED,SLH-56DCT31 ORN
			<EXCEPT ZD3RN1DM,YZD3RNDCM,ZD3RNDM,YZD3RNDM>
T-T C.B			
C401	87-A11-148-080		CAP,TC U 0.1-50 Z F
CON401	86-NFZ-675-010		CONN,5P H 6216-11H
M401	87-045-364-010		MOTOR(BCH3B14)
PS401	87-026-573-010		SNSR,PHOTO GP1S53V
DRIVE C.B<EXCEPT ZD4RDC>			
M1	87-045-358-010		MOT,RF-310TA 43<EXCEPT ZD4RDC>
M2	87-045-356-010		MOT,RF-310TA 30<EXCEPT ZD4RDC>
PIN3	87-A60-086-010		CONN,6P H6216-11<EXCEPT ZD4RDC>
SW1	87-A90-042-010		SW,LEAF MSW-17310MVP0
			<EXCEPT ZD4RDC>
MOTOR C.B<ZD4RDC>			
M2	9X-262-513-210		SLED MOTOR<ZD4RDC>
PIN3	91-564-722-110		CONNECTOR 6P<ZD4RDC>
SW1	91-572-085-110		LEAF SW<ZD4RDC>

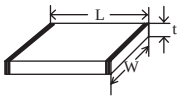
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

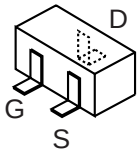
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



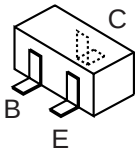
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード ：A Resistor Code：A
1/16W	1005	±5%	CJ		1.0	0.5	0.35	104
1/16W	1608	±5%	CJ		1.6	0.8	0.45	108
1/10W	2125	±5%	CJ		2	1.25	0.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.55	128

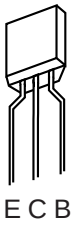
TRANSISTOR ILLUSTRATION



2SK2158

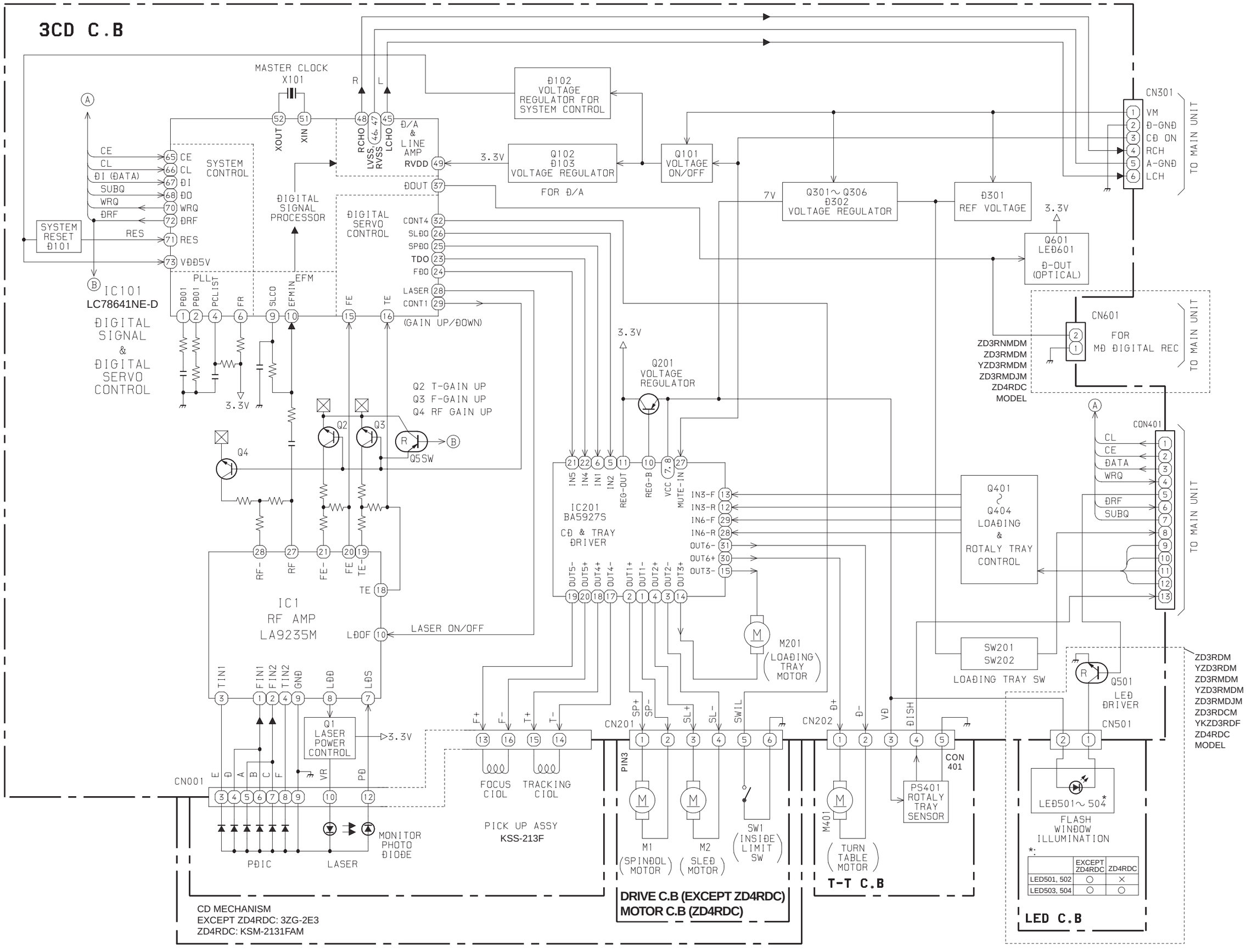


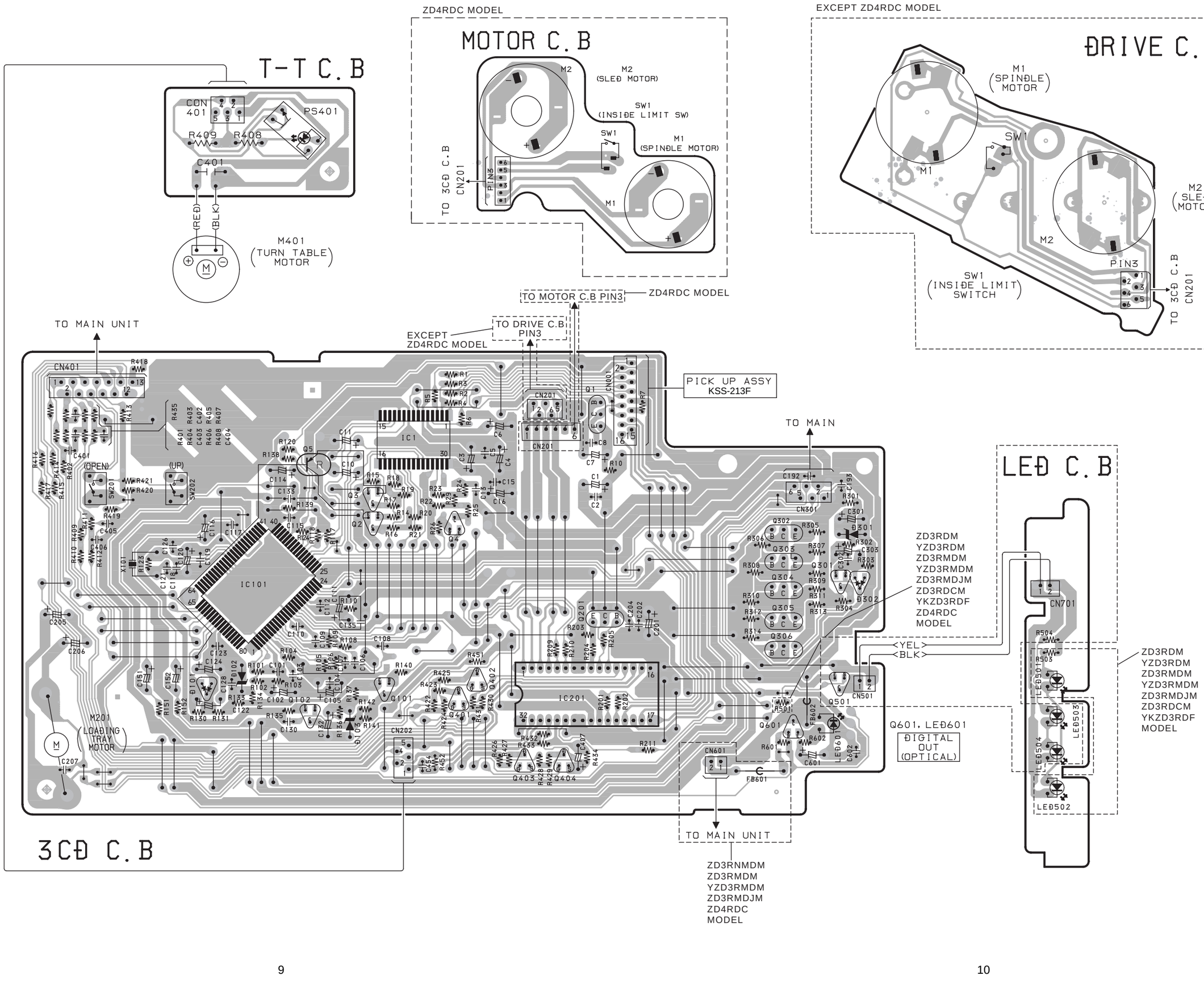
2SA1235F
2SC3052F



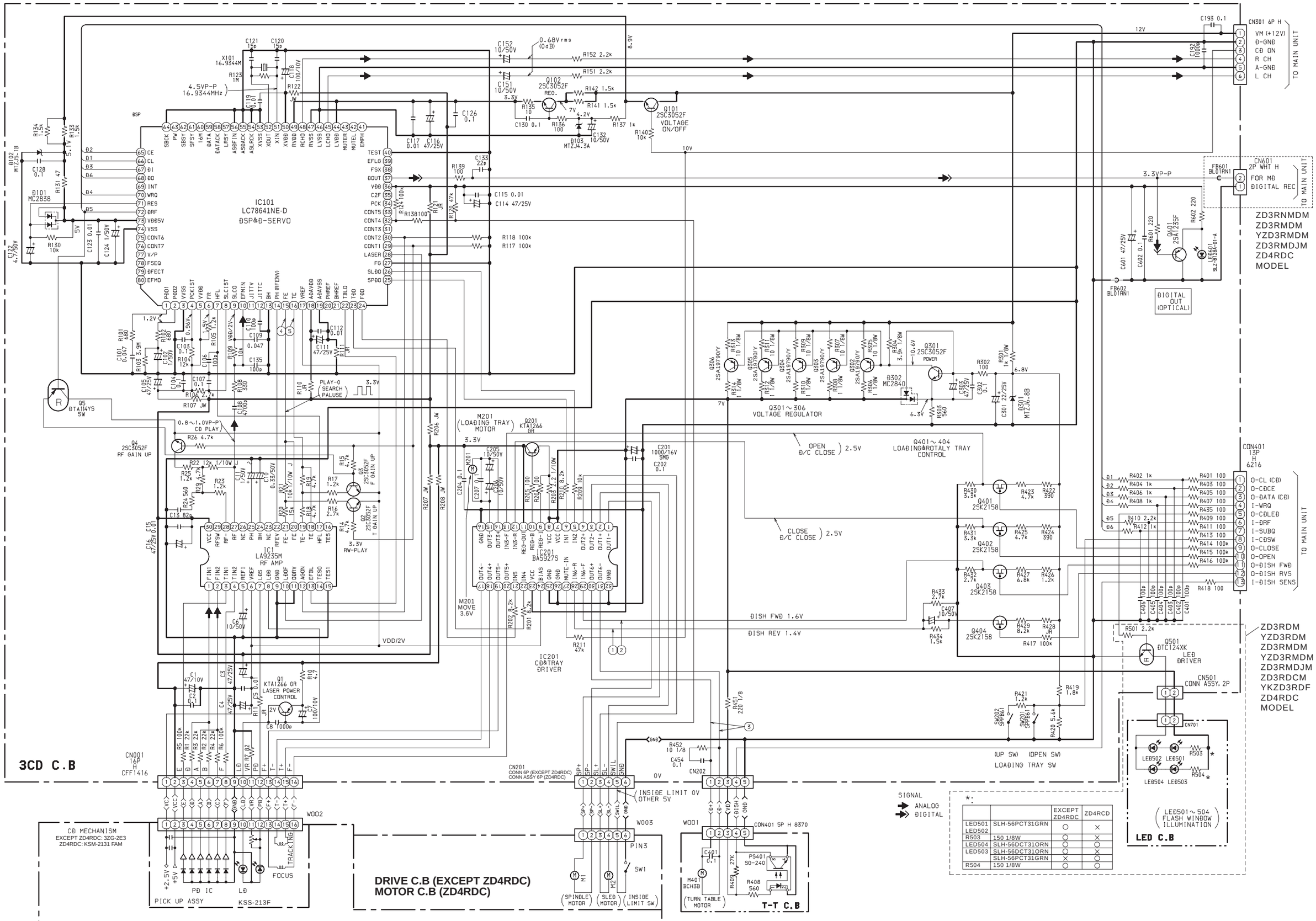
DTA114YS

2SA19790/Y
KTA1266GR


3CD C.B
MASTER CLOCK
X101
XOUT
XIN
R
L
RCHO
LVSS, RVSS
LCHO
Đ/A & LINE AMP
RVDD
ĐOUT
Đ102 VOLTAGE REGULATOR FOR SYSTEM CONTROL
Q102 Đ103 VOLTAGE REGULATOR
FOR Đ/A
3.3V
Q101 VOLTAGE ON/OFF
7V
Q301~Q306 Đ302 VOLTAGE REGULATOR
Đ301 REF VOLTAGE
CN301
VM
Đ-GNĐ
CĐ ON
RCH
A-GNĐ
LCH
TO MAIN UNIT
SYSTEM CONTROL
CE
CL
ĐI (ĐATA)
SUBQ
WRQ
ĐRF
RES
VĐĐ5V
SYSTEM RESET Đ101
ĐIGITAL SIGNAL PROCESSOR
ĐIGITAL SERVO CONTROL
CONT4
SLĐO
SPĐO
TDO
FĐO
LASER
CONT1
(GAIN UP/ĐOWN)
PLL
EFM
IC101
LC78641NE-D
ĐIGITAL SIGNAL & ĐIGITAL SERVO CONTROL
PĐO1
PĐO1
PCLIST
FR
SLCO
EFMIN
FE
TE
3.3V
Q2 T-GAIN UP
Q3 F-GAIN UP
Q4 RF GAIN UP
Q2
Q3
Q4
R
Q5SW
Q201 VOLTAGE REGULATOR
IC201 BA5927S
CĐ & TRAY ĐRIVER
IN5
IN4
IN1
IN2
REG-OUT
REG-B
VCC
MUTE-IN
IN3-F
IN3-R
IN6-F
IN6-R
OUT6-
OUT6+
OUT3-
OUT5-
OUT5+
OUT4+
OUT4-
OUT1+
OUT1-
OUT2+
OUT2-
OUT3+
Q401 ~ Q404 LOAĐING & ROTALY TRAY CONTROL
M201 (LOAĐING TRAY MOTOR)
SW201 SW202
LOAĐING TRAY SW
CN601
FOR MĐ ĐIGITAL REC
TO MAIN UNIT
ZD3RNMDM
ZD3RMDM
YZD3RMDM
ZD3RMDJM
ZD4RDC
MODEL
CON401
CL
CE
ĐATA
WRQ
ĐRF
SUBQ
TO MAIN UNIT
Q501 LEĐ ĐRIVER
CN501
LEĐ501~504*
FLASH WINĐOW ILLUMINATION
*:
EXCEPT ZD4RDC
ZD4RDC
LED501, 502
LED503, 504
LED C.B
ZD3RDM
YZD3RDM
ZD3RMDM
YZD3RMDM
ZD3RMDJM
ZD3RDCM
YKZD3RDF
ZD4RDC
MODEL
TRACKING CIOL
FOCUS CIOL
PICK UP ASSY
KSS-213F
CN201
CN202
PIN3
CON 401
PS401 ROTALY TRAY SENSOR
M1 (SPINĐOL MOTOR)
M2 (SLEĐ MOTOR)
SW1 (INSIĐE LIMIT SW)
M401 (TURN TABLE MOTOR)
T-T C.B
DRIVE C.B (EXCEPT ZD4RDC)
MOTOR C.B (ZD4RDC)
IC1
RF AMP
LA9235M
RF-
RF
FE-
FE
TE-
TE
LĐOF
LASER ON/OFF
TIN1
FIN1
FIN2
TIN2
GNĐ
LĐĐ
LĐS
Q1 LASER POWER CONTROL
CN001
VR
PĐ
PĐIC
LASER
MONITOR PHOTO ĐIOĐE
CD MECHANISM
EXCEPT ZD4RDC: 3ZG-2E3
ZD4RDC: KSM-2131FAM


T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
ZD4RDC MODEL
MOTOR C.B
M2
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
SW1
M1 (SPINDLE MOTOR)
M1
TO 3CD C.B CN201
PIN3
EXCEPT ZD4RDC MODEL
DRIVE C.B
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SWITCH)
TO 3CD C.B CN201
TO MOTOR C.B PIN3
ZD4RDC MODEL
TO MAIN UNIT
EXCEPT ZD4RDC MODEL
TO DRIVE C.B PIN3
PICK UP ASSY KSS-213F
TO MAIN
CN401
CN201
CN001
IC1
IC101
IC201
CN202
CN301
CN701
CN501
CN601
Q1
Q5
Q101
Q102
Q201
Q301
Q302
Q303
Q304
Q305
Q306
Q403
Q404
Q501
Q601
M201
LOADING TRAY MOTOR
(OPEN)
(UP)
SW201
SW202
ZD3RDM
YZD3RDM
ZD3RMDM
YZD3RMDM
ZD3RMDJM
ZD3RDCM
YKZD3RDF
ZD4RDC
MODEL
<YEL>
<BLK>
Q601, LED601
DIGITAL OUT (OPTICAL)
TO MAIN UNIT
ZD3RNMDM
ZD3RMDM
YZD3RMDM
ZD3RMDJM
ZD4RDC
MODEL
LED C.B
LED501
LED502
LED503
LED504
ZD3RDM
YZD3RDM
ZD3RMDM
YZD3RMDM
ZD3RMDJM
ZD3RDCM
YKZD3RDF
MODEL
3CD C.B

SCHEMATIC DIAGRAM



TEST MODE

1. How to Start the CD Test Mode

While pressing the CD function key, connect the AC power plug to wall outlet.
The test mode starts up and “CD TEST” appears on the display.

2. How to Exit the CD Test Mode

Press the POWER button or disconnect the AC power plug from wall outlet.
* When any function key other than PLAY is pressed during playback, the test mode is canceled.

3. Function and Use of the CD Test Mode

NO	MODE	How to enter the mode	Display	Operation	Check item
1	Start mode		All indicators turn on	• All FL all ndicators turn on	• FL check • Microprocessor check
2	Search mode	STOP button	CD	• LD turns on all the time • Focus search continuos operation *1 • Spindle motor continuos kick	• APC circuit check • Laser current measurement • Focus search waveform check • Focus error waveform check (Ignores DRF during search mode)
3	Play mode	PLAY button	Normal	• Normal playback • Focus search is continued if failed in TOC READ.	• Each servo circuit is checked • DRF check
4	Traverse mode	PAUSE button	Normal	• Tracking servo OFF/ON Repeats OFF/ON every time the PAUSE button is pressed	• Tracking balance check
5	Sled mode	FF button	CD TEST	• Moves PU to inner circumference *2 Kicks the lens to inner circumference at the same time	• Sled circuit check • Tracking circuit check • Mechanism operation check • PU check
		RWD button	CD TEST	• Moves PU to outer circumference *2 Kicks the lens to outer circumference at the same time	
6	Spindle mode	TAPE REC button	All indicators turn on	• Pressing the button once rotates the spindle motor in the normal direction (rough speed). Pressing the button again rotates it in the reverse direction. Pressing it again stops the motor	• Spindle circuit check • Spindle motor check
7	RF AGC mode	TUNER button	AGC ON/OFF	• Repeats ON/OFF every time the TUNER button is pressed	• PU good or defective check • RF AMP circuit check

*1 ..... When the focus search keeps running for 10 minutes or longer continuously, the driver IC heats up, and the protective circuit works so that the machine may stops operating.
In this case, turn off the main power, wait for a while and restart the machine.

*2 ..... Do not keep pressing the FF or RWD button while the pickup is located at the innermost or outermost circumference because the gear can be damaged as the sled motor keeps rotating.

4. Automatic Adjustment Result Display

The automatic adjustment values of the focus and the tracking can be displayed.

4-1. Automatic Adjustment Result Display of Focus Offset Cancel/Gain

1) Enter the start mode (all indicators turn on).
2) Press the TAPE button to display “F**” and set each of the adjustment item to either ON or OFF. (Refer to the following table.)
3) Press the PLAY button to play back the CD.
4) Press the CD button.
5) The automatic adjustment value “F** **” is displayed. (Refer to the following table.)
6) Upon completion of check, press the CD button twice to return to the play mode.

Adjustment item (ON = 1, OFF = 0)			Automatic adjustment value display (Asterisk * means hexadecimal display.)			
F	OFFSET	GAIN	F	OFFSET	—	GAIN
F	0	0	F	Not displayed	Not displayed	Not displayed
F	1	1	F	**	Not displayed	**
F	1	0	F	**	Not displayed	Not displayed
F	0	1	F	Not displayed	Not displayed	**

4-2. Automatic Adjustment Result Display of Tracking Offset Cancel/Balance/Gain

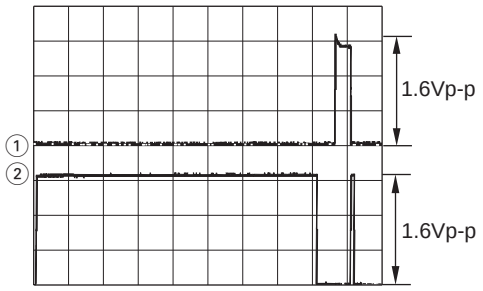
1) Enter the start mode (all indicators turn on).
2) Press the AUX button to display “T***” and set each adjustment item to either ON or OFF. (Refer to the following table.)
3) Press the PLAY button to play back the CD.
4) Press the CD button twice.
5) The automatic adjustment value “F******” is displayed. (Refer to the following table.)
6) Upon completion of check, press the CD button to return to the play mode.

Adjustment item (ON = 1, OFF = 0)				Automatic adjustment value display (Asterisk * means hexadecimal display.)			
T	OFFSET	BALANCE	GAIN	T	OFFSET	BALANCE	GAIN
T	0	0	0	T	Not displayed	Not displayed	Not displayed
T	1	1	1	T	**	**	**
T	1	1	0	T	**	**	Not displayed
T	1	0	1	T	**	Not displayed	**
T	1	0	0	T	**	Not displayed	Not displayed
T	0	1	1	T	Not displayed	**	**
T	0	1	0	T	Not displayed	**	Not displayed
T	0	0	1	T	Not displayed	Not displayed	**

WAVE FORM

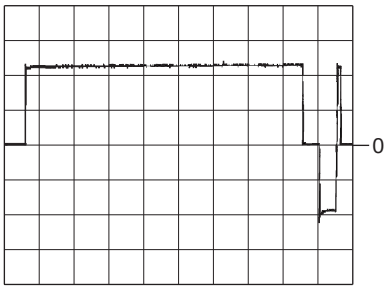
① IC201 ㉘ (IN6-R)
② IC201 ㉙ (IN6-F)

VOLT/DIV: 500mV
TIME/DIV: 200mS



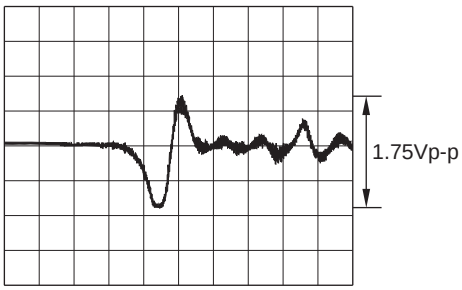
③ Between CN202 ① and ②
(② Pin: 0 Level)

VOLT/DIV: 1V
TIME/DIV: 200mS



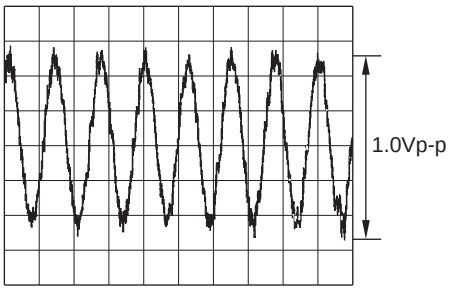
④ IC101 ⑮ (FE)

VOLT/DIV: 500mV
TIME/DIV: 2mS



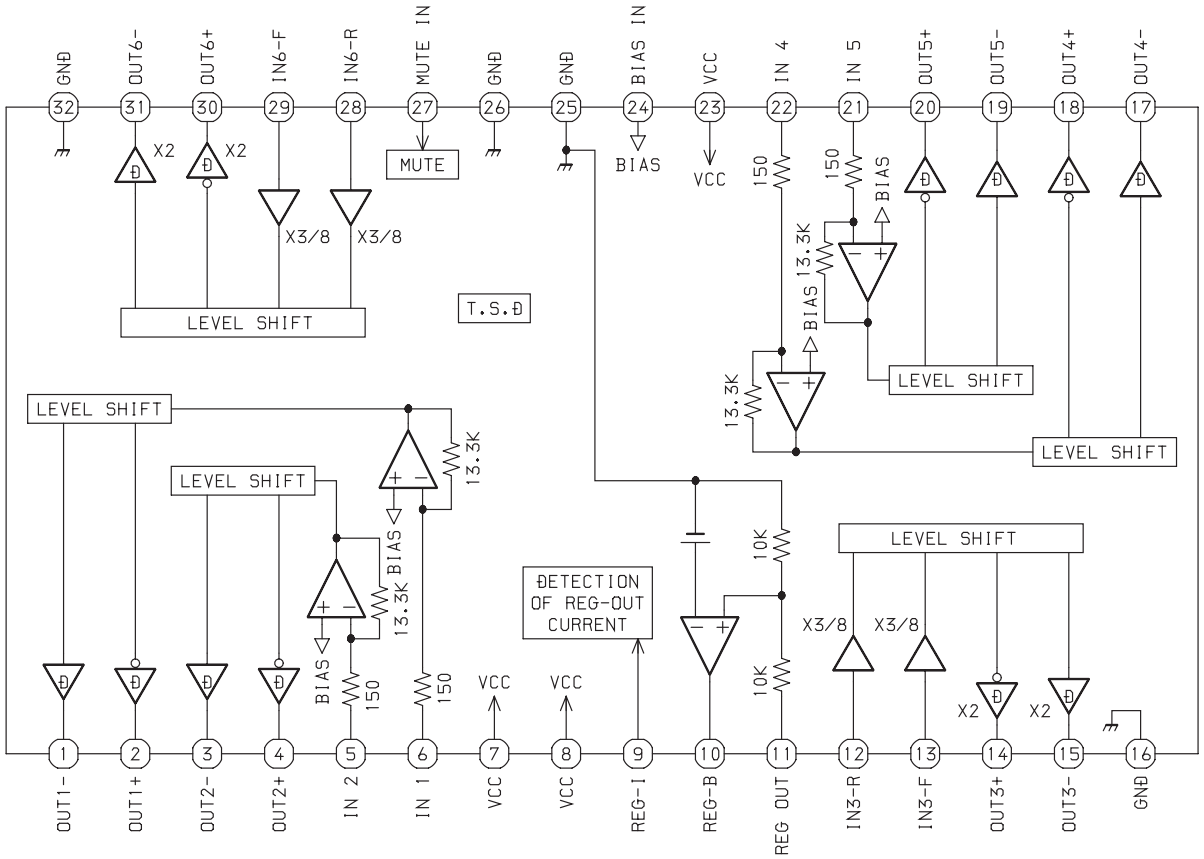
⑤ IC101 ⑯ (TE)

VOLT/DIV: 200mV
TIME/DIV: 200µS

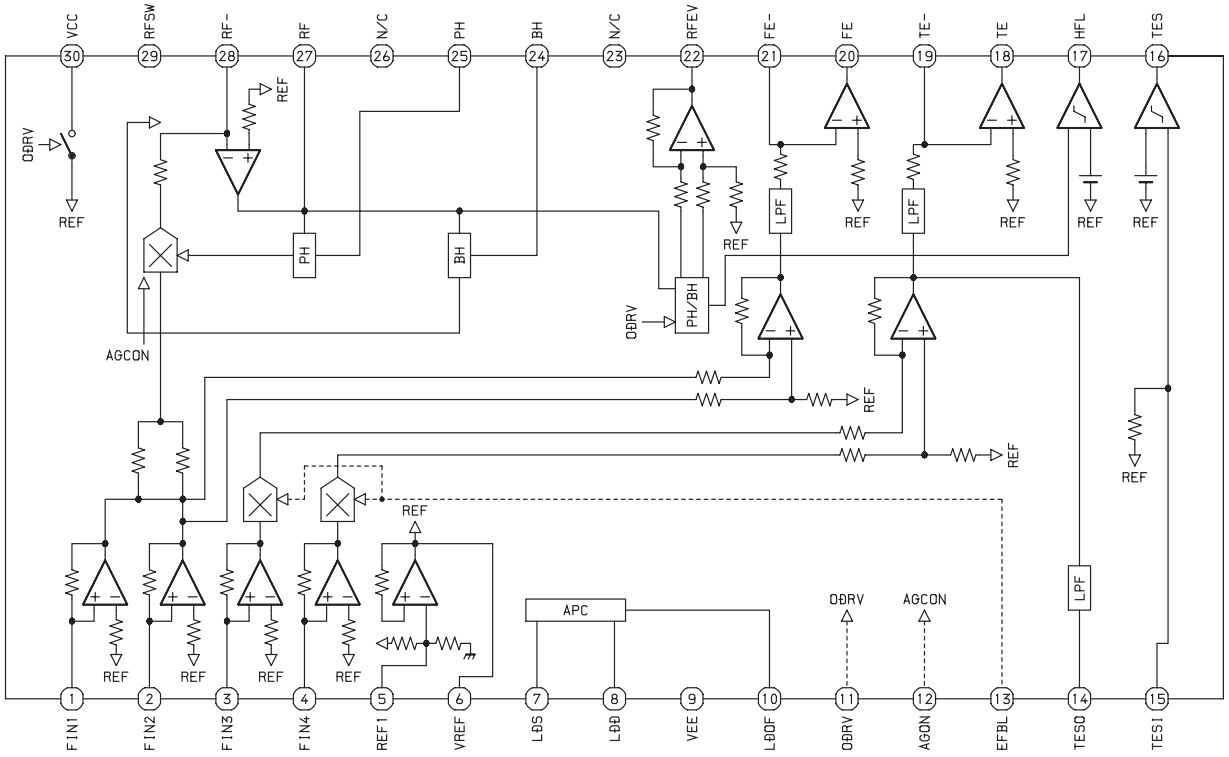


IC BLOCK DIAGRAM

IC, BA5927S



IC, LA9235M



IC DESCRIPTION

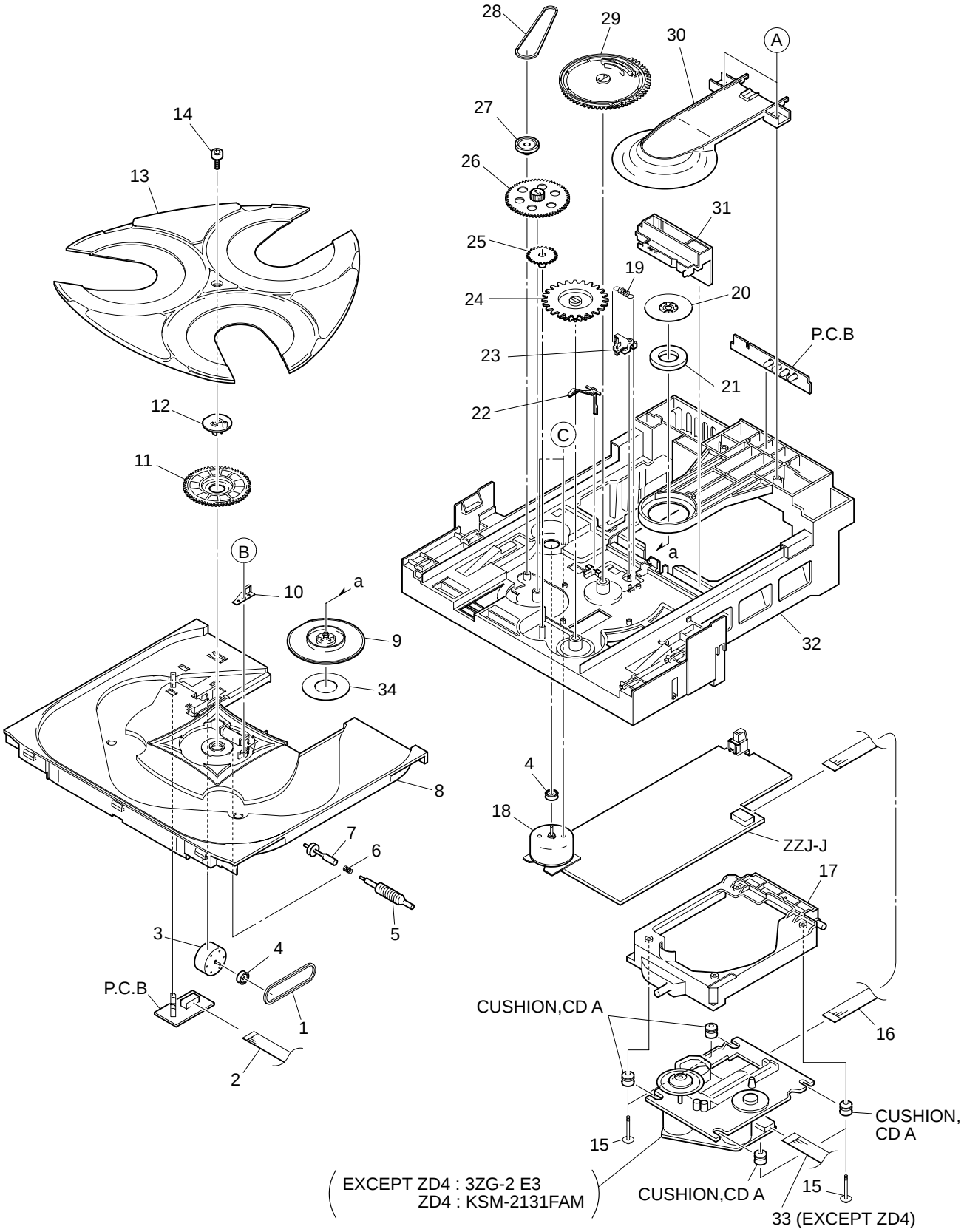
IC, LC78641NE-D

Pin No.	Pin Name	I/O	Description
1	PDO1	O	Internal VCO control phase comparator output pin. (Pull down)
2	PDO2	O	Internal VCO control phase comparator output pin. OFF for rough servo, ON for phase servo. (Pull down)
3	VVSS	—	Internal VCO ground pin.
4	PCKIST	—	PDO output current adjustment resistor connection pin.
5	VVDD	—	Internal VCO power supply pin.
6	FR	—	VCO frequency range adjustment resistor connection pin. (Pull up)
7	HFL	I	Mirror detection signal input pin.
8	SLCIST	—	SLCO output current adjustment resistor connection pin.
9	SLCO	O	Control output.
10	EFMIN	I	EFM signal input pin.
11	JITTV	O	Jitter detection monitor pin.
12	JITTC	O	Jitter detection adjustment pin. (Pull down)
13	BH	I	BH signal input pin. (Connected to GND)
14	PH (RFENV)	I	PH signal or RFENV signal input pin.
15	FE	I	FE signal input pin.
16	TE	I	TE signal input pin.
17	VREF	I	VREF input pin.
18	ADAVDD	—	Servo A/D, D/A power supply pin.
19	ADAVSS	—	Servo A/D, D/A ground pin.
20	PHREF	O	PH reference output pin. (Not connected)
21	BHREF	O	BH reference output pin. (Not connected)
22	TBLO	O	Tracking balance output pin.
23	TDO	O	Tracking control output pin.
24	FDO	O	Focus control output pin.
25	SPDO	O	Spindle control output pin.
26	SLDO	O	Thread control output pin.
27	DVREF/FG	I/O	Output driver VREF output pin. FG signal input pin. (Connected to GND)
28	LASER	O	Laser ON/OFF control pin.
29	CONT1	I/O	General-purpose input/output pin 1. (Connected to GND)
30	CONT2	I/O	General-purpose input/output pin 2. (Connected to GND)
31	CONT3	I/O	General-purpose input/output pin 3. (Connected to GND) (Not connected)
32	CONT4	I/O	General-purpose input/output pin 4.
33	CONT5	I/O	General-purpose input/output pin 5. (Not connected)
34	PCK	O	EFM data playback clock monitor pin. Average 4.3218MHz when the phase is locked. (Not connected)
35	C2F	O	C2 flag output pin. (Not connected)
36	VDD	—	Digital power supply pin.
37	DOUT	O	Digital out output pin. (EIAJ format)
38	FSX	O	Output pin for the 7.35kHz synchronization signal divided from the crystal oscillator. (Not connected)

Pin No.	Pin Name	I/O	Description
39	EFLG	O	C1, C2 error correction monitor pin. (Not connected)
40	TEST	I	Test input pin. (Connected to GND)
41	EMPH	I/O	Emphasis pin. Which becomes an input pin after reset and can be controlled externally. This becomes an emphasis monitor pin under control by command. (Not connected)
42	MUTEL	O	L channel mute output pin. (Not connected)
43	MUTER	O	R channel mute output pin. (Not connected)
44	LVDD	—	L channel power supply pin.
45	LCHO	O	L channel output pin.
46	LVSS	—	L channel ground pin.
47	RVSS	—	R channel ground pin.
48	RCHO	O	R channel output pin.
49	RVDD	—	R channel power supply pin.
50	XVDD	—	Crystal oscillator power supply pin.
51	XIN	I	Connections for a 16.9344MHz crystal oscillator pin.
52	XOUT	O	
53	XVSS	—	Crystal oscillator ground pin.
54	ASLRCK	I	L/R clock input pin. (Connected to GND)
55	ASDACK	I	Bit clock input pin. (Connected to GND)
56	ASDFIN	I	L/R channel data input pin. (Connected to GND)
57	LRSY	O	L/R clock output pin. (Not connected)
58	DATACK	O	Bit clock output pin. (Not connected)
59	DATA	O	L/R channel data output pin. (Not connected)
60	16M	O	16.9344MHz output pin. (Not connected)
61	SFSY	O	Subcode frame synchronization signal output pin. This signal falls when the subcode is in the standby state. (Not connected)
62	SBSY	O	Subcode clock synchronization signal output pin. (Not connected)
63	PW	O	Subcode P, Q, R, S, T, U and W output pin. (Not connected)
64	SBCK	I	Subcode readout clock input pin. (Connected to GND)
65	CE	I	Chip enable signal input pin.
66	CL	I	Data transfer clock input pin.
67	DI	I	Data input pin.
68	DO	O	Data output pin.
69	INT	O	Interruption signal output pin. (Not connected)
70	WRQ	O	Interruption signal output pin.
71	RES	I	Reset input pin. This pin must be set low briefly after power is first applied.
72	DRF	O	Focus ON detect pin.
73	VDD5V	—	Microprocessor interface power supply.
74	VSS	—	Digital ground pin.
75	CONT6	I/O	General-purpose input/output pin 6.
76	CONT7	I/O	General-purpose input/output pin 7.
77	V/P	O	Rough servo/phase control automatic switching monitor output pin. “H” for rough servo and “L” for phase servo. (Not connected)

Pin No.	Pin Name	I/O	Description
78	FSEQ	O	Synchronization signal detection output pin. Outputs a high level when the synchronization signal detected from the EFM signal and the internally generated synchronization signal agree. (Not connected)
79	DEFECT	I/O	Defect pin. Which becomes an input pin after reset and can be controlled externally. This becomes the defect monitor pin under control by command. (Not connected)
80	EFMO	O	EFM signal output pin. (Not connected)

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL PARTS LIST 1/1

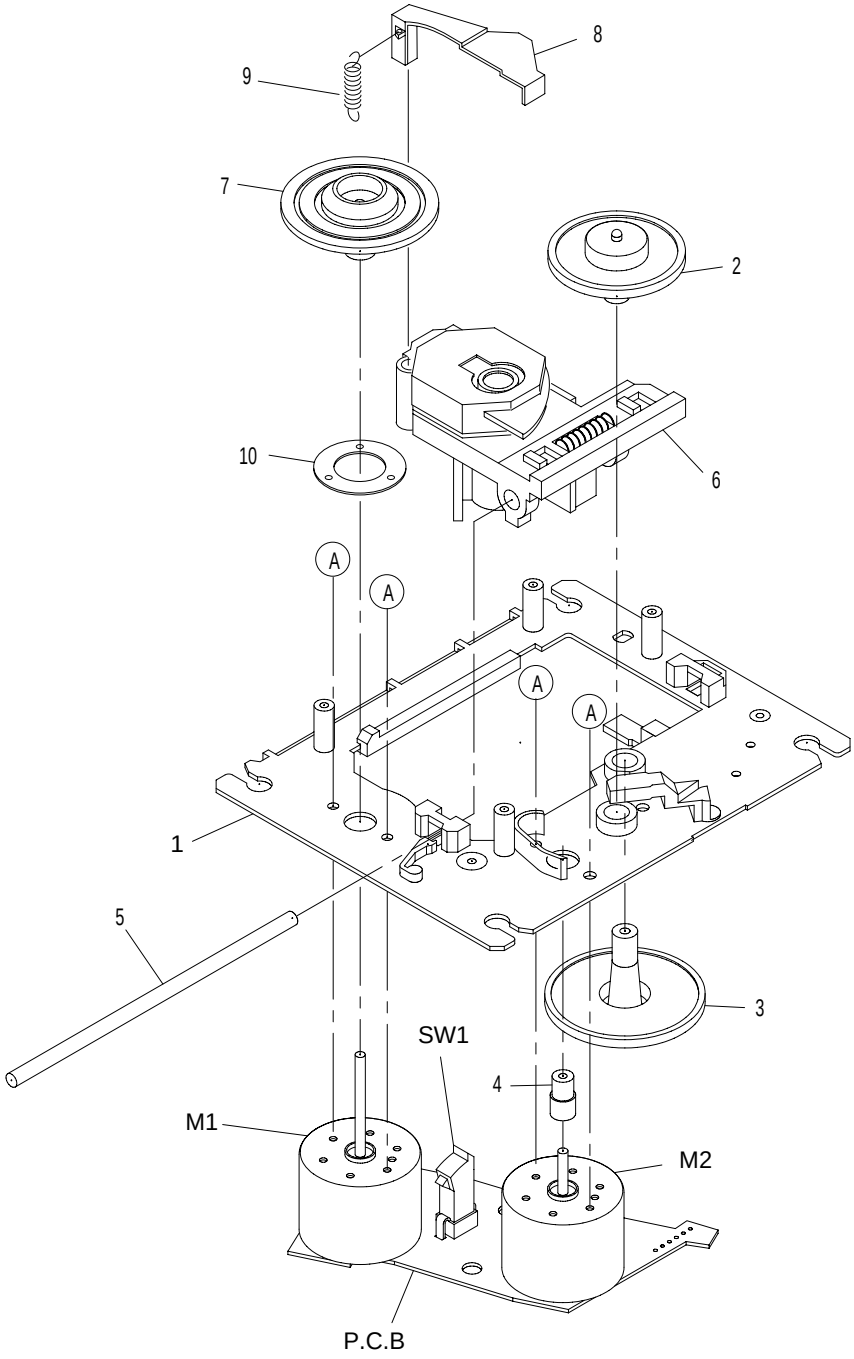
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-225-010		BELT,SQ1.0-63.3
2	84-ZG1-673-010		F-CABLE,5P 1.25 210MM BLACK N <EXCEPT YZD3RNMDM,ZD3RNDM,YZD3RNDM,ZD4RDC>
2	84-ZG1-672-010		F-CABLE,5P 1.25 210MM WHITE N <YZD3RNMDM,ZD3RNDM,YZD3RNDM,ZD4RDC>
3	87-045-364-010		MOTOR(BCH3B14)
4	84-ZG1-267-010		PULLEY,LOAD MO 8<EXCEPT YKZD3RDF>
4	81-ZG1-212-010		PULLY,LOAD MO<YKZD3RDF>
5	84-ZG1-238-010		GEAR,WORM N
6	84-ZG1-248-010		SPR-C,WORM
7	84-ZG1-239-210		PULLY,WORM N<EXCEPT ZD4RDC>
7	84-ZG1-273-010		PULLEY,WORM 4<ZD4RDC>
8	8A-ZG1-001-010		TRAY,NO3 BLU
9	84-ZG1-291-110		HLDR,MAGNET 4 NAT <EXCEPT YKZD3RDF,ZD4RDC>
9	84-ZG1-272-110		HLDR,MAGNET N4<YKZD3RDF,ZD4RDC>
10	84-ZG1-259-010		SPR-P,WORM
11	84-ZG1-221-010		GEAR,MAIN TT<YKZD3RDF>
11	84-ZG1-269-010		GEAR,MAIN TT 4<EXCEPT YKZD3RDF>
12	84-ZG1-224-010		LEVER,TT <EXCEPT YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
12	84-ZG1-288-010		LEVER,TT NAT <YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
13	8A-ZG1-002-010		TURN TABLE,NO1 BLU
14	81-ZG1-239-010		S-SCREW,TT
15	81-ZG1-271-010		S-SCREW MECH REAR
16	85-NFT-611-110		FF-CABLE 16P-1.0 <YZD3RNDCM,YZD3RDCM,ZD4RDC>
16	85-NFT-611-110		FF-CABLE 16P-1.0 <EXCEPT YZD3RNDCM,YZD3RDCM,ZD4RDC>
17	84-ZG1-287-010		HLDR,MECHA NAT <YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
17	84-ZG1-212-210		HLDR,MECHA NO2 <EXCEPT YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
18	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA) <EXCEPT ZD4RDC>
18	87-045-383-010		MOT,M9I50T28-2<ZD4RDC>
19	84-ZG1-211-010		SPR-E CAM S
20	84-ZG1-285-010		PLATE,MAGNET BLK<ZD3RN1DM>
20	81-ZG1-255-110		PLATE,MAGNET MK2<EXCEPT ZD3RN1DM>
21	83-ZG3-604-010		RING,MAG 2
22	83-ZG3-213-010		LVR,SW
23	84-ZG1-208-210		LEVER,CAM<YKZD3RDF,ZD4RDC>
23	84-ZG1-266-010		LEVER,CAN 8 <EXCEPT YKZD3RDF,ZD4RDC>
24	84-ZG1-205-210		GEAR,TRAY (*)
25	81-ZG1-291-110		GEAR,TRAY RELAY NO3 <EXCEPT ZD4RDC>
25	81-ZG1-250-110		GEAR,TRAY RELAY MK2*<ZD4RDC>
26	84-ZG1-206-110		GEAR,RELAY<YKZD3RDF,ZD4RDC>
26	84-ZG1-274-010		GEAR,RELAY 8 <EXCEPT YKZD3RDF,ZD4RDC>
27	84-ZG1-207-010		PULLEY,RELAY<EXCEPT ZD4RDC>
27	84-ZG1-271-010		PULLEY,RELAY 8<ZD4RDC>
28	84-ZG1-209-010		BELT,SQ1.8-117.7
29	84-ZG1-203-410		GEAR,MAIN CAM <YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
29	84-ZG1-215-410		GEAR,MAIN CAM BLU <EXCEPT YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
30	84-ZG1-011-010		REFLECTOR,CD <EXCEPT ZD3RN1DM,YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
31	84-ZG1-216-310		SLIDE,MECHA CAM YEL <EXCEPT YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
31	84-ZG1-204-310		SLIDER,MECHA CAM <YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
32	84-ZG1-201-410		CHAS,MECHA <EXCEPT YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM,ZD4RDC>
32	84-ZG1-286-010		CHAS,MECHA NAT <YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
32	84-ZG1-232-210		CHAS,MECHA N<ZD4RDC>
33	84-ZG1-630-010		CABLE FFC 6P-1.25 <YZD3RNDCM,YZD3RDCM>
33	84-ZG1-630-010		CABLE FFC 6P-1.25 <EXCEPT YZD3RNDCM,YZD3RDCM,ZD4RDC>
34	8A-ZG1-208-010		SH, 18-26-0.5 W/ADH BLK
A	87-067-703-010		TAPPING SCREW, BVT2+3-10 <EXCEPT ZD3RN1DM,YZD3RNDCM,YZD3RNMDM,ZD3RNDM,YZD3RNDM>
B	87-067-981-010		BVT2+3-6 BLK
C	87-251-070-410		U+2.6-3<ZD4RDC>

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

CD MECHANISM EXPLODED VIEW 1/1 (3ZG-2 E3)

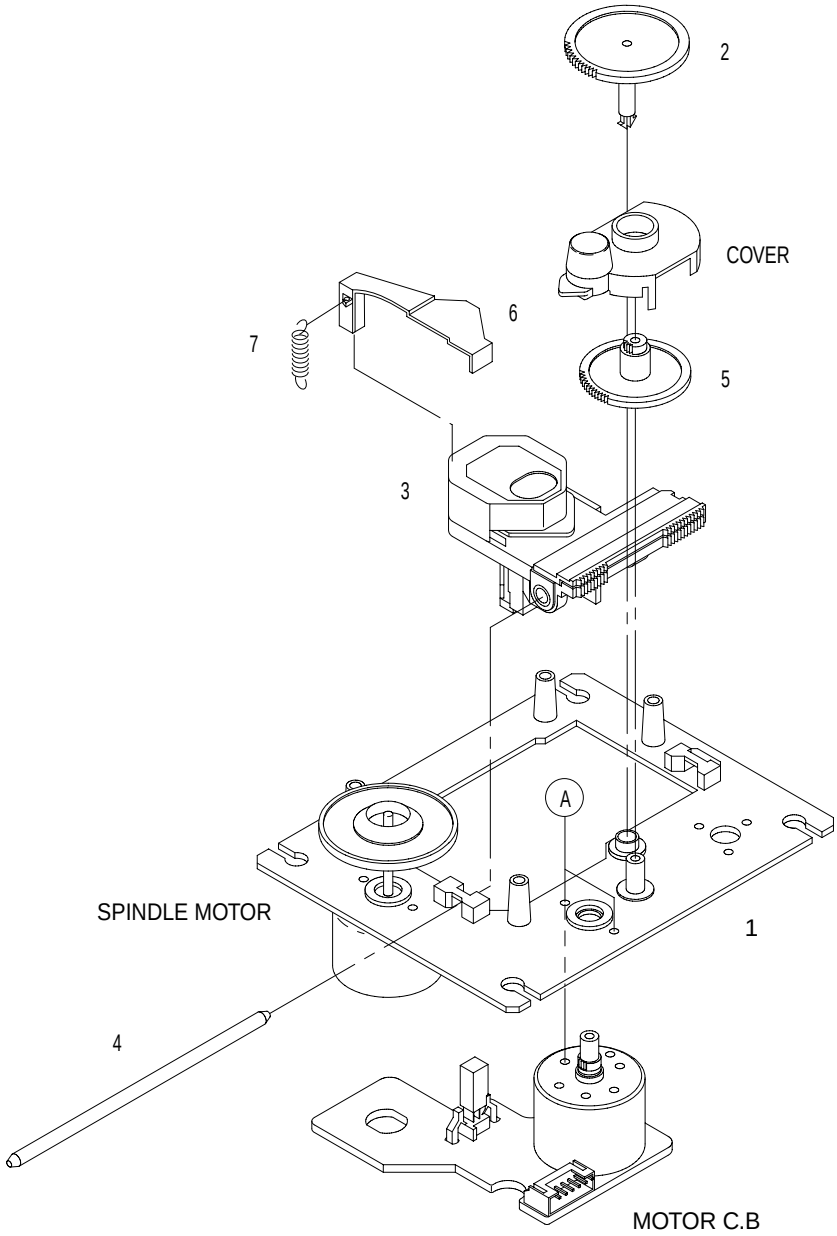


CD MECHANISM PARTS LIST 1/1 (3ZG-2 E3)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-243-310		CHAS ASSY,SHT
2	83-ZG2-235-010		GEAR,A3
3	83-ZG2-205-210		GEAR,B
4	83-ZG2-236-010		GEAR,MOTOR 3
5	83-ZG2-253-110		SHAFT,SLIDE 5
6	87-A90-836-010		PICKUP,KSS-213F
7	83-ZG2-227-310		TURN TABLE,C1
8	83-ZG2-245-510		LEVER,SHUTTER(*)
9	83-ZG2-250-110		SPR-E,SHT 2
10	83-ZG2-241-110		PLATE,C2
A	87-261-032-210		V+2-3

CD MECHANISM EXPLODED VIEW 1/1 (KSM-2131 FAM)



CD MECHANISM PARTS LIST 1/1 (KSM-2131 FAM)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	9X-264-629-220		MOTOR CHASSIS ASSY(MB)(FR)
2	92-626-907-010		GEAR(A)(S)
3	87-A90-836-010		OPTICAL PICK UP KSS-213F
4	92-626-908-020		SHAFT SLED
5	92-627-003-010		GEAR(B)
6	92-646-697-020		LENS SHUTTER(F)
7	92-646-702-010		SPRIG EXTENSION
A	97-621-255-150		SCREW+P2-3

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